09/970,453
Updated Search
L/Cook 2/12/07

d his

(FILE 'HOME' ENTERED AT 12:10:53 ON 12 FEB 2007)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 12:11:21 ON 12 FEB 2007

| | | |
|---|---|---|
| L1 | 96 | S (DETECTION ZONES?) |
| L2 | 5 | S L1 AND MICROFLUIDIC? |
| L3 | 2 | DUPLICATE REMOVE L2 (3 DUPLICATES REMOVED) |
| L4 | 14764 | S MICROFLUIDIC? |
| L5 | 3374 | S L4 AND DETECTION? |
| L6 | 140 | S L5 AND VELOCITY |
| L7 | 71 | DUPLICATE REMOVE L6 (69 DUPLICATES REMOVED) |
| L8 | 3 | S L7 AND PD<2001 |
| L9 | 3 | S (MULTIPLE ANALYTE MEASUREMENT?) |
| L10 | 3 | DUPLICATE REMOVE L9 (0 DUPLICATES REMOVED) |
| L11 | 3 | S (MULTIPLE DETECTION ZONE?) |
| L12 | 3 | DUPLICATE REMOVE L11 (0 DUPLICATES REMOVED) |

FILE 'STNGUIDE' ENTERED AT 12:20:37 ON 12 FEB 2007

| | | |
|---|---|---|
| L13 | 0 | S L4 AND (DETECTION ZONES) |
| L14 | 0 | S L4 AND (DETECTION ZONE?) |
| L15 | 0 | S L4 AND VELOCITY |

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 12:26:48 ON 12 FEB 2007

| | | |
|---|---|---|
| L16 | 14764 | S MICROFLUIDIC? |
| L17 | 5 | S L16 AND (DETECTION ZONES) |
| L18 | 2 | DUPLICATE REMOVE L17 (3 DUPLICATES REMOVED) |
| L19 | 5 | S L16 AND (MULTIPLE DETECTION) |
| L20 | 4 | S L19 NOT L17 |
| L21 | 0 | S (MULTIPLE ANALYTE MEASUEMENTS) |
| L22 | 2 | S L16 AND (ANALYTE MEASUREMENT?) |
| L23 | 2 | DUPLICATE REMOVE L22 (0 DUPLICATES REMOVED) |
| L24 | 3374 | S L16 AND DETECTION? |
| L25 | 273 | S L24 AND REVIEW? |
| L26 | 22 | S L25 AND PD<2001 |
| L27 | 7 | S (SHAH CONVOLUTION) AND L16 |
| L28 | 2 | DUPLICATE REMOVE L27 (5 DUPLICATES REMOVED) |

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d his

     (FILE 'HOME' ENTERED AT 12:10:53 ON 12 FEB 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 12:11:21 ON 12
     FEB 2007
L1            96 S (DETECTION ZONES?)
L2             5 S L1 AND MICROFLUIDIC?
L3             2 DUPLICATE REMOVE L2 (3 DUPLICATES REMOVED)
L4         14764 S MICROFLUIDIC?
L5          3374 S L4 AND DETECTION?
L6           140 S L5 AND VELOCITY
L7            71 DUPLICATE REMOVE L6 (69 DUPLICATES REMOVED)
L8             3 S L7 AND PD<2001
L9             3 S (MULTIPLE ANALYTE MEASUREMENT?)
L10            3 DUPLICATE REMOVE L9 (0 DUPLICATES REMOVED)
L11            3 S (MULTIPLE DETECTION ZONE?)
L12            3 DUPLICATE REMOVE L11 (0 DUPLICATES REMOVED)

     FILE 'STNGUIDE' ENTERED AT 12:20:37 ON 12 FEB 2007
L13            0 S L4 AND (DETECTION ZONES)
L14            0 S L4 AND (DETECTION ZONE?)
L15            0 S L4 AND VELOCITY

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 12:26:48 ON 12
     FEB 2007
L16        14764 S MICROFLUIDIC?
L17            5 S L16 AND (DETECTION ZONES)
L18            2 DUPLICATE REMOVE L17 (3 DUPLICATES REMOVED)
L19            5 S L16 AND (MULTIPLE DETECTION)
L20            4 S L19 NOT L17
L21            0 S (MULTIPLE ANALYTE MEASUEMENTS)
L22            2 S L16 AND (ANALYTE MEASUREMENT?)
L23            2 DUPLICATE REMOVE L22 (0 DUPLICATES REMOVED)
L24         3374 S L16 AND DETECTION?
L25          273 S L24 AND REVIEW?
L26           22 S L25 AND PD<2001
L27            7 S (SHAH CONVOLUTION) AND L16
L28            2 DUPLICATE REMOVE L27 (5 DUPLICATES REMOVED)

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ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:708417 CAPLUS
DN 145:162683
ED Entered STN: 21 Jul 2006
TI Linear analysis of biopolymer sequence using an array of multiple detection zones
IN Nadel, Mark; Harris, John
PA U.S. Genomics, Inc., USA
SO U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DT Patent
LA English
INCL 436085000
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 3, 36
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2006160231 | A1 | 20060720 | US 2005-286714 | 20051123 |
| PRAI | US 2004-630902P | P | 20041124 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| US 2006160231 | INCL | 436085000 |
| | IPCI | G01N0033-00 [I,A] |
| | IPCR | G01N0033-00 [I,A]; G01N0033-00 [I,C] |
| | NCL | 436/085.000 |

AB The invention relates to linear anal. of polymer sequence information, such as of biopolymers (e.g., DNA), and provides techniques to improve the amount and quality of polymer information obtained. The invention is based on the discovery that multiple detection zones may be used during linear anal. of a polymer to acquire a greater amount of information when a polymer is passed there through. An apparatus for anal. of a biopolymer comprising a microfluidic channel and an array of multiple detection zones disposed within the microfluidic channel is disclosed.
ST biopolymer polymer sequence linear analysis multiple detection zone array; microfluid channel array biopolymer sequence linear analysis
IT Information systems
(computerized; linear anal. of biopolymer sequence using array of multiple detection zones)
IT Biopolymers
Polymers, analysis
RL: ANT (Analyte); ANST (Analytical study)
(labeled; linear anal. of biopolymer sequence using array of multiple detection zones)
IT Computer application
DNA sequence analysis
Lab-on-a-chip
Microarray technology
Protein sequence analysis
RNA sequence analysis
Sampling
(linear anal. of biopolymer sequence using array of multiple detection zones)
IT Capillary tubes
(microfluidic; linear anal. of biopolymer sequence using array of multiple detection zones)
IT Fluids
(microfluids, microfluidic channel; linear anal. of biopolymer sequence using array of multiple detection zones)

L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:708417 CAPLUS
DN 145:162683
ED Entered STN: 21 Jul 2006
TI Linear analysis of biopolymer sequence using an array of multiple detection zones
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SO U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
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Section cross-reference(s): 3, 36
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CLASS

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|---|---|---|
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| | IPCI | G01N0033-00 [I,A] |
| | IPCR | G01N0033-00 [I,A]; G01N0033-00 [I,C] |
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ST biopolymer polymer sequence linear analysis multiple detection zone array; microfluid channel array biopolymer sequence linear analysis
IT Information systems
(computerized; linear anal. of biopolymer sequence using array of multiple detection zones)
IT Biopolymers
Polymers, analysis
RL: ANT (Analyte); ANST (Analytical study)
(labeled; linear anal. of biopolymer sequence using array of multiple detection zones)
IT Computer application
DNA sequence analysis
Lab-on-a-chip
Microarray technology
Protein sequence analysis
RNA sequence analysis
Sampling
(linear anal. of biopolymer sequence using array of multiple detection zones)
IT Capillary tubes
(microfluidic; linear anal. of biopolymer sequence using array of multiple detection zones)
IT Fluids
(microfluids, microfluidic channel; linear anal. of biopolymer sequence using array of multiple detection zones)

L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:453752 CAPLUS
DN 142:459767
ED Entered STN: 27 May 2005
TI Extension of the dynamic detection range of assay dev

AN 2005:453752 CAPLUS
DN 142:459767
ED Entered STN: 27 May 2005
TI Extension of the dynamic detection range of assay dev

ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1
AN 2006:474135 BIOSIS
DN PREV200600465490
TI Microfluidic techniques for single-cell protein expression analysis.
AU Fitzpatrick, Ethan; McBride, Sterling; Yavelow, Jonathan; Najmi, Saltanat; Zanzucchi, Peter; Wieder, Robert [Reprint Author]
CS Univ Med and Dent New Jersey, New Jersey Med Sch, Div Med Oncol Hematol, 185 S Orange Ave,MSB 1-596, Newark, NJ 07103 USA
wiederro@umdnj.edu
SO Clinical Chemistry, (JUN 2006) Vol. 52, No. 6, pp. 1080-1088.
CODEN: CLCHAU. ISSN: 0009-9147.
DT Article
LA English
ED Entered STN: 20 Sep 2006
Last Updated on STN: 20 Sep 2006
AB Background: The analysis of single cells obtained from needle aspirates of tumors is constrained by the need for processing. To this end, we investigated two microfluidic approaches to measure the expression of surface proteins in single cancer cells or in small populations (< 50 cells).Methods: One approach involved indirect fluorescence labeling of cell-surface proteins and channeling of cells in a microfluidic device past a fluorescence detector for signal quantification and analysis. A second approach channeled cells in a microfluidic device over detection zones
coated with ligands to surface proteins and measured rates of passage and of retardation based on transient interactions between surface proteins and ligands.Results: The fluorescence device detected expression of integrin alpha 5 induced by basic fibroblast growth factor (FGF-2) treatment in MCF-7 cells and that of Her-2/neu in SK-BR-3 cells compared with controls. Experiments measuring passage retardation showed significant differences in passage rates between FGF-2-treated and untreated MCF-7 cells over reaction regions coated with fibronectin and antibody to integrin alpha 5 beta 1 compared with control regions. Blocking peptides reversed the retardation, demonstrating specificity.Conclusions: Immunofluorescence detection in a microfluidic channel demonstrates the potential for assaying surface protein expression in a few individual cells and will permit the development of future iterations not requiring cell handling. The flow retardation device represents the first application of this technology for assessing cell-surface protein expression in cancer cells and may provide a way for analyzing expression profiles of single cells without preanalytical manipulation. (c) 2006 American Association for Clinical Chemistry.
CC Cytology - General 02502
Cytology - Human 02508
Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
IT Major Concepts
Biochemistry and Molecular Biophysics; Methods and Techniques; Cell Biology
IT Chemicals & Biochemicals
basic fibroblast growth factor; surface proteins: expression; integrin-alpha-5: expression
IT Methods & Equipment
fluorescence detector: laboratory equipment; immunofluorescent labeling: laboratory techniques, immunologic techniques; microfluidic technique: laboratory techniques
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name

MDA-MB-231 cell line (cell_line): human breast cancer cells
MCF-7 cell line (cell_line): human breast cancer cells
SK-Br-3 cell line (cell_line): human breast cancer cells
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
RN 106096-93-9 (basic fibroblast growth factor)

=>

ANSWER 5 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:136579 CAPLUS
DN 134:275094
ED Entered STN: 25 Feb 2001
TI The incredibly shrinking laboratory reactions, separations and detections
AU Sanders, Giles H. W.; Manz, Andreas
CS AstraZeneca/SmithKline Beecham Centre for Analytical Sciences, Department of Chemistry, Imperial College of Science, Technology and Medicine, London, SW7 2AZ, UK
SO JALA (2000), 5(5), 40-45
CODEN: JALLFO
PB JALA
DT Journal; General Review
LA English
CC 80-0 (Organic Analytical Chemistry)
Section cross-reference(s): 3
AB A review with 47 refs. Microfluidic systems are developing in application and importance in many aspects of chemical This short review aims to provide a simple introduction to some of the concepts and instrumentation involved in this field. In particular, a number of systems for reactions, detections and anal. that have arisen from the research of the authors' group are illustrated.
ST miniaturization lab reaction sepn detection review
IT Spectroscopy
(Fourier-transform, detection method; the incredibly shrinking laboratory reactions, sepns. and detections)
IT Plasma
(d.c., detection method; the incredibly shrinking laboratory reactions, sepns. and detections)
IT Analytical apparatus
Chromatography
Electrophoresis
(micro total anal. system and micro-synthesis-total anal. system; the incredibly shrinking laboratory reactions, sepns. and detections)
RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; PCR 1991
(2) Becker, H; Sensors and Materials 1999, V11, P297 CAPLUS
(3) Bessoth, F; Anal Comm 1999, V36, P213 CAPLUS
(4) Cheng, J; Nuc Ac Res 1996, V24, P380 CAPLUS
(5) Crabtree, H; Anal Chem 1999, V71, P2130 CAPLUS
(6) Duffy, D; Anal Chem 1998, V70, P4974 CAPLUS
(7) Ehrfeld, W; Micro Total Analysis System 2000, P33 CAPLUS
(8) Ehrfeld, W; Microsystem technology in chemistry and life science 1998, V194, P233 CAPLUS
(9) Eijkel, J; Anal Chem 2000, V72, P2547 CAPLUS
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(11) Eijkel, J; Mesoscopic Chemistry IUPAC monograph 2000, P185
(12) Eijkel, J; Micro Total Analysis Systems 2000, P591 CAPLUS
(13) Erbacher, C; Mikrochim Acta 1999, V131, P19 CAPLUS
(14) Harrison, D; Technical Digest Solid State Sensors and Actuators Workshop 1996, P752
(15) Harrison, D; Technical Digest Transducers 95 8th International Conference on Solid State Sensors and Actuators Stockholm 1995, P752
(16) Hofmann, O; Anal Chem 1999, V71, P678 CAPLUS
(17) Jacobson, S; Anal Chem 1998, V70, P3476 CAPLUS
(18) Jakeway, S; J Anal Chem 2000, V366, P525 CAPLUS
(19) Koch, M; Sensors and actuators A 1999, V74, P207
(20) Kopp, M; Micro Total Analysis Systems 1998, P7
(21) Kopp, M; Science 1998, V280, P1046 CAPLUS
(22) Koutny, L; Anal Chem 1996, V68, P18 CAPLUS
(23) Kutter, J; Anal Chem 1998, V70, P3291 CAPLUS
(24) Kutter, J; Trends Anal Chem 2000, V19, P352 CAPLUS

ANSWER 5 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:136579 CAPLUS
DN 134:275094
ED Entered STN: 25 Feb 2001
TI The incredibly shrinking laboratory reactions, separations and detections
AU Sanders, Giles H. W.; Manz, Andreas
CS AstraZeneca/SmithKline Beecham Centre for Analytical Sciences, Department of Chemistry, Imperial College of Science, Technology and Medicine, London, SW7 2AZ, UK
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PB JALA
DT Journal; General Review
LA English
CC 80-0 (Organic Analytical Chemistry)
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(Fourier-transform, detection method; the incredibly shrinking laboratory reactions, sepns. and detections)
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(d.c., detection method; the incredibly shrinking laboratory reactions, sepns. and detections)
IT Analytical apparatus
Chromatography
Electrophoresis
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(12) Eijkel, J; Micro Total Analysis Systems 2000, P591 CAPLUS
(13) Erbacher, C; Mikrochim Acta 1999, V131, P19 CAPLUS
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(16) Hofmann, O; Anal Chem 1999, V71, P678 CAPLUS
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(26) Manz, A; J Chromatogr 1992, V593, P253 CAPLUS
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(46) Xu, Y; Analyst 2000, V125, P677 CAPLUS
(47) Yao, S; Proc Nalt Acad Sci USA 1999, V96, P5372 CAPLUS

(25) Kwok, Y; Micro Total Analysis Systems 2000, P603 CAPLUS
(26) Manz, A; J Chromatogr 1992, V593, P253 CAPLUS
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(30) Mathies, R; Micro Total Analysis Systems 1998, P1
(31) Mullis, K; Cold Harbor Symp Quant Bio 1986, V51, P260
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(45) Woolley, A; Anal Chem 1996, V68, P4081 CAPLUS
(46) Xu, Y; Analyst 2000, V125, P677 CAPLUS
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ANSWER 3 OF 4 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

AN 2001327560 EMBASE

TI Velocity measurement of particles flowing in a microfluidic chip using shah convolution fourier transform detection.

AU Kwok Y.C.; Jeffery N.T.; Manz A.

CS A. Manz, A.Z./S.K. Beecham Centre Anal. Sci., Department of Chemistry, Imperial Coll. Sci., Technol./Med., London SW7 2AY, United Kingdom. a.manz@ic.ac.uk

SO Analytical Chemistry, (15 Apr 2001) Vol. 73, No. 8, pp. 1748-1753. .
Refs: 22
ISSN: 0003-2700 CODEN: ANCHAM

CY United States

DT Journal; Article

FS 029 Clinical Biochemistry

LA English

SL English

ED Entered STN: 4 Oct 2001
Last Updated on STN: 4 Oct 2001

AB A noninvasive radiative technique, based on Shah convolution Fourier transform detection, for velocity measurement of particles in fluid flows in a microfluidic chip, is presented. It boasts a simpler instrumental setup and optical alignment than existing measurement methods and a wide dynamic range of velocities measurable. A glass-PDMS microchip with a layer of patterned Cr to provide multiple detection windows which are 40 μm wide and 70 μm apart is employed. The velocities of fluorescent microspheres, which were electrokinetically driven in the channel of the microfluidic chip, were determined. The effects of increasing the number of detection windows and sampling period were investigated. This technique could have wide applications, ranging from the determination of the velocity of particles in pressure-driven flow to the measurement of electrophoretic mobilities of single biological cells.

CT Medical Descriptors:
*Fourier transformation
*fluid flow
velocity
technique
pressure
molecular dynamics
apparatus
electrophoresis
frequency modulation
article
Drug Descriptors:
chromium
microsphere

RN (chromium) 16065-83-1, 7440-47-3

ANSWER 3 OF 4 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

AN 2001327560 EMBASE

TI Velocity measurement of particles flowing in a microfluidic chip using shah convolution fourier transform detection.

AU Kwok Y.C.; Jeffery N.T.; Manz A.

CS A. Manz, A.Z./S.K. Beecham Centre Anal. Sci., Department of Chemistry, Imperial Coll. Sci., Technol./Med., London SW7 2AY, United Kingdom. a.manz@ic.ac.uk

SO Analytical Chemistry, (15 Apr 2001) Vol. 73, No. 8, pp. 1748-1753. .
Refs: 22
ISSN: 0003-2700 CODEN: ANCHAM

CY United States

DT Journal; Article

FS 029 Clinical Biochemistry

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SL English

ED Entered STN: 4 Oct 2001
Last Updated on STN: 4 Oct 2001

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CT Medical Descriptors:
*Fourier transformation
*fluid flow
velocity
technique
pressure
molecular dynamics
apparatus
electrophoresis
frequency modulation
article
Drug Descriptors:
chromium
microsphere

RN (chromium) 16065-83-1, 7440-47-3